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Support for AppleWorks and ///EZ Pieces Users

Can You Distribute AppleWorks Data Files?

Dear Cathleen,

Do I need permission from Claris Corporation to prepare and distribute AppleWorks data files on disk?

Al O'Donnell
Kennebunk, Maine

[Ed: You can create and distribute AppleWorks data files without permission from the company, but make certain that no portion of the AppleWorks program is on any of the disks you distribute. Claris Corporation owns the rights to AppleWorks and AppleWorks GS. For example, you cannot develop special custom printer configurations and then distribute the file SEG.PR that contains those printer configurations. SEG.PR is a program file; you cannot distribute copies of the file even if you modify the original SEG.PR code.]

Also remember that you cannot distribute disks with copies of ProDOS. Apple Computer owns the rights to ProDOS; you can license ProDOS for distribution by contacting Apple Computer, 20525 Mariani Avenue, Cupertino, California 95014.

You can distribute macros you develop as long as you do not include the macro program on your data disk. If you want to distribute macros that do not require the user to own UltraMacros, consider licensing TaskMaster. For more information about TaskMaster licenses, contact Randy Brandt, JEM Software, Box 20920, El Cajon, California 92021.]

ImageWriter Prints Garbage

[Ed: This letter appeared as an exchange of ideas on the Electronic Forum, NAUG's electronic bulletin board.]

Dear NAUG,

Every once in a while my ImageWriter II printer prints a series of numbers and letters instead of text. The printout looks like this:

34 21 4A 08 1E 1E 07 15 2B 1E 1A
14 04 15 1B 1E 2F 05 09 16 21 1E

Is there something wrong with my printer or my copy of AppleWorks?

Joshua Thompson
Grosse Ile, Michigan

[Reply from Roger Shaddick and Ann Bennett: You are getting a "hex dump"; your ImageWriter is printing the hexadecimal value of each character instead of the character itself.]

The usual cause of this problem is leaving your finger on the Select button when you turn your printer on. This puts your ImageWriter into a special test mode that prints hexadecimal characters instead of the text you want.

Also, make certain the printer is turned off when you boot AppleWorks. This makes it less likely that the printer will lock up AppleWorks and reduces the likelihood that you will get hexadecimal instead of text output.]

The **National AppleWorks Users Group (NAUG)** is an association that supports AppleWorks users. NAUG provides technical support and information about AppleWorks and enhancements to that program. Our primary means of communicating with members is through the monthly newsletter entitled the **AppleWorks Forum**.

AppleWorks Forum

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Consider Getting an Apple III

Dear Cathleen,

I feel as if I've been on an expedition to the headwaters of the Amazon and made great discoveries.

It all began with a desire to run AppleWorks at work. I work for a bare-lightbulb-hanging-from-the-ceiling public agency that resisted my attempts to computerize for over 13 years. I decided to take matters into my own hands.

I already ran AppleWorks at home but needed the least expensive way to run this program at work. David Ottalini's letter in the December 1986 *AppleWorks Forum* describing how to run an AppleWorks work-alike on the Apple III did the trick. It turns out that my local dealer had two Apple IIIs he wanted to unload on the first taker, so I found myself the proud owner of an unguaranteed Apple III, an Apple III+ (both 256K), and two old ProFile hard disk drives, as well as 50 pounds of software.

It turned out to be quite an adventure, and I'd urge other potential explorers to join me. These computers are fast, powerful, and easy to use. The keyboards match the finest available. The Apple IIIs are built to operate in a hard disk environment with an operating system that is your invisible servant (unlike MS-DOS which is your visible master or ProDOS which is just a pain).

Programs like III EZ Pieces (the AppleWorks work-alike) run from a sophisticated hard disk program selector. The Apple III offers full desktop accessories including a pop-up note pad, a calculator, macros usable in any application, and a pop-up calendar with a reminder system.

I believe that other computers have not yet reached the level of development of the Apple III way back in 1984. It is one of the great travesties of all time that this great computer died a-borning. I am proud and honored to be the custodian of two of these wonderful machines.

Cliff Egel
La Grange Park, Illinois

[Ed: Interestingly enough, Robert Lissner originally developed AppleWorks on an Apple III computer (see Lissner's letter in the November 1988 issue of the AppleWorks Forum).]

The Apple III is an exceptional machine and, at current used market prices, is an unusual value. Unfortunately, support and software for the Apple III can be hard to find. The nation's largest supplier of Apple III hardware and software, Sun Remarketing (Box 4059, Logan, Utah 84321 (800) 821-3221), sells 256K Apple III computers for \$395 including a monochrome monitor and Apple II emulation software. A second 5.25-inch floppy disk costs \$170, and III EZ Pieces costs \$99.

Unfortunately, the company's price of \$895 for a 10-megabyte ProFile hard disk system is unreasonable given the current prices for hard disk systems. Data files are completely transportable between III EZ Pieces and AppleWorks.

Washington Apple Pi, a large users group located in the Washington, D.C. area, has a group of active Apple III enthusiasts. For more information, contact Washington Apple Pi, 8227 Woodmont Avenue, Suite 201, Bethesda, Maryland 20814.]

Member Needs Help Using a Scanner

Dear NAUG,

Has anyone figured out how to use a scanner or card reader to input data into AppleWorks? I'd like to learn of their experience.

Dennis Clark
Union High School
Box 908
Union, Oregon 98773

[Ed: We're also interested in learning how to use scanners with AppleWorks. Please contact NAUG if you know how to use a scanner or card reader with AppleWorks.]

More Fonts Printouts Now Available

Dear Cathy,

I enjoy using TimeOut SuperFonts in conjunction with the fonts on the 11 fonts disks in NAUG's Public Domain Library. However, I can never remember the style and size of each font.

I prepared a sample printout of the fonts on each disk. Members who want printed copies of this output should send me 75 cents per font disk and a self-addressed, stamped envelope. Alternatively, send me \$8 for the complete 22-page collection and I will pay the postage.

John Sambataro
3201 North 74th Avenue
Hollywood, Florida 33024

[Ed: Mr. Sambataro's attractive printouts show one or two words printed in every font available on each disk.]

NAUG members now have two alternatives for sample fonts output. Richard Melpignano (Box 119, Bellingham, MA 02019) printed a separate page for each font. This makes it easier to visualize what you will get when you print a document. (Mr. Sambataro printed all the fonts from each disk on one or two pages; that makes it easier to compare fonts.) The Melpignano output costs 50 cents per font (send him a self-addressed stamped envelope) or \$14 for the complete 161-page collection.

See the Letters to NAUG section in the December 1988 issue of the *AppleWorks Forum* for more information about how to use these fonts to enhance your AppleWorks printouts.]

Want to meet your fellow AppleWorks users?

Become a NAUG "Members Helping Members" volunteer. Send NAUG a description of your expertise with AppleWorks and AppleWorks-related products. Include your telephone numbers so your colleagues can call for help.

How To Align Paper in an ImageWriter II

Dear NAUG,

Did you ever notice the two red marks inscribed on the chrome paper bail bar at the top of the ImageWriter II printer? Those marks are eight inches apart and correspond to AppleWorks' 8.0 inch platen width setting. Everything you print in AppleWorks will appear between those marks. In addition, the marks are a useful guide to help you center paper correctly in the printer.

Fred Style
South Orange, New Jersey



Remember to notify NAUG if you change your address. Do not rely on the post office to forward your mail; you may miss some issues. Send address changes to NAUG; Box 87453; Canton, MI 48187.

FRENCH

GERMAN

ITALIAN

SPANISH

EuroWorks™

Type accented foreign text quickly and simply with the classic AppleWorks® word processor. Then, from **inside** AppleWorks, **EuroWorks** prints your foreign text on an ImageWriter® I or II or compatible printer.

Foreign files may include every character on your American keyboard plus 13 French, 7 German, 10 Italian, or 10 Spanish: just two sensible keystrokes per foreign character. Eight new symbols for English too: just three strokes each!

EuroWorks requires classic AppleWorks v2.0 or v2.1 USA and an Apple DMP, ImageWriter I or II, or Scribe; an MT85/86; or a Seikosha SP-1000AP printer. **EuroWorks** is compatible with, but does not require, the TimeOut™ series from Beagle Bros, Inc.

\$20 for any ONE language
\$30 for ALL FOUR

USA, Canada, Mexico postpaid; others add \$3

AppleWorks®, ImageWriter® by Apple Computer, Inc.

Mail Check, MO, or Net-30 School PO to

The S.A. AuTeur Co: A70

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(503) 645-2306



TM



©1989, Beagle Bros, Inc., 6215 Ferris Square, Suite 100, San Diego, CA 92121 • TimeOut requires an Apple IIgs, IIc or IIe (128K min) and AppleWorks v2.0 or 2.1 • Network/District/Site licenses available
To request our catalog or for more information call 619-452-5500 • To order call 800-345-1750, in California call 800-992-4022 • AppleWorks is a registered trademark of Apple Computer, Inc., licensed to Claris Corp.

Branching Spreadsheets: How to Use the @IF Function

by Warren Williams and Cathleen Merritt

This is the first in a four-part series on how to write branching spreadsheets. This month, we describe how to use the @IF function in AppleWorks. In future articles we will describe how to use @LOOKUP, @CHOOSE, and AND/OR logic.

Most spreadsheet applications are “linear”. You present AppleWorks with a list of numbers and the program does the necessary arithmetic manipulations; e.g., computes the sum or average of the numbers. But the AppleWorks spreadsheet can be “smarter” than that; you can prepare spreadsheet templates that make decisions, or “branch”, based on rules you develop in your worksheet.

In this article, we will describe how to use the @IF function to develop branching spreadsheets.

The Purpose of @IF

The @IF function lets you use the number in one cell as the basis for a decision that appears in another cell. For example, you can tell AppleWorks to check a cell that contains your current inventory of widgets. If that inventory goes below a certain number, you can use the @IF command to tell AppleWorks to order more widgets. *Figure 1* contains a simple spreadsheet that handles this order.

The power in this spreadsheet comes from the @IF function. The formula in cell D4 checks the number of cans of baked beans in inventory (cell B4). If there are fewer than 12 cans in inventory, the spreadsheet orders more baked beans. If there are 12 or more cans in stock, the spreadsheet places no order. The @IF formula in cell D4 determines whether or not to order more baked beans.

You can also use the @IF function to develop spreadsheets that compute commissions differently based on whether or not a person meets their sales quota. *Figure 2* contains a spreadsheet that pays salespersons a commission of 1% for sales below their quota, 1.5% for sales above their quota.

***AppleWorks’
spreadsheet
is “smart”;
you can
prepare
templates
that make
decisions
based on rules
you develop.***

Column F in *Figure 2* contains an @IF function that checks if the actual sales are greater than the quota. If the sales are equal to or smaller than the quota, the formula computes the commission as 1% of sales. If the sales are greater than the quota, the formula computes the commission as 1% of the sales up to the quota and 1.5% of sales above the quota.

As you get comfortable with the @IF function, you will find numerous applications for its power. For example, *Figure 3* uses an @IF function in column G to check if a student passed or failed a test. If the student passed, the @IF function displays a zero in column G. If the student failed, the formula displays the number one. The formula in cell C13 counts the number of 1’s in cells G4 through G11. Since each “1” indicates a failing student, the sum of the ones is the number of students who failed the test. (Note that you must change the order of calculation to “Rows” for this spreadsheet to work correctly.)

Figure 1: Inventory that Orders New Items

A	B	C	D	E	F
1		Quantity	Number		
2	Item	on hand	to Order		
3					
4	Baked Beans	25	0	Baked Beans	
5	Cookies	31	0	Cookies	
6	Ginger Roots	17	0	Ginger Roots	
7	Widgets	6	24	Widgets	
8	.	.	.	.
9	.	.	.	.
10	.	.	.	.
11					
12					

D4: @IF(B4<12,72,0)
D5: @IF(B5<12,12,0)
D6: @IF(B6<24,36,0)
D7: @IF(B6<12,24,0)

These formulas test the values under the heading "Quantity on hand" for a low inventory condition. When stock is below the minimum level (12 cans baked beans, 12 packages of cookies, 24 ginger roots, or 12 widgets), the formula displays the standard quantity for re-orders (72 beans, 12 cookies, 36 roots, 24 widgets). If the stock is at or above the minimum level, the formula displays a zero, indicating no purchase is necessary.

The examples in *Figure 1-3* demonstrate some of the power and flexibility inherent in the @IF function. But the three worksheets use the same basic @IF formula to accomplish their aim. Let's examine the rules and structure of the @IF function:

Basic Structure of @IF Formulas

The basic @IF formula has three parts:

1. A test to determine if something is true,
2. The number to display in the cell if the test is true,
3. The number to display if the test is false.

For example, imagine that you put the formula @IF(A1=5,100,1) in cell A10. This formula tests to see if cell A1 equals five. If cell A1 equals five, the number 100 appears in cell A10, the cell where you wrote the formula. If cell A1 does not contain a five, the number one appears in cell A10.

The general syntax of the @IF function is:

@IF(test,iftrue,iffalse).

The "test" can include a number or formula and can refer to other cells. *Figure 4* lists the symbols you can use as part of the test. For example, the formula @IF(B5>B1,100,0) tests to see if the number in B5 is greater than the number in cell B1. If the test is true, the number 100 appears in place of the @IF formula. If the test is false, a zero appears in the cell.

"Iftrue" and "iffalse" can be numbers, formulas, or cell references. For example, the formula @IF(A1=1,B3+B4,C3+C4) tests to see if cell A1

contains a one. If cell A1 contains a one, AppleWorks replaces the formula with the sum of cells B3 and B4. If cell A1 contains anything but a one, AppleWorks replaces the formula with the sum of the numbers in cells C3 and C4.

Basic Rules of @IF

There are two basic rules that make it easier to understand the @IF function:

1. Although the formula refers to other cells, the results appear in the cell in which you write the @IF formula. This makes sense because all formulas yield numbers that appear in the cell in which you write the formula. For example, imagine you write the formula @AVG(B1...B10) in cell B20. The formula computes the average of cells B1 through B10 and displays that average in cell B20, the cell that contains the formula. The @IF function works the same way; AppleWorks replaces the formula with a number.
2. The @IF function can only yield a number. You cannot use @IF to check if a cell contains text, nor can you produce text based on a number in another cell.

Examples of @IF

Now let's examine the @IF formulas in *Figures 1-3*.

Figure 1: The formulas in column D determine whether or not to order more baked beans, cookies, ginger roots, or widgets. The formula in cell D4 checks cell B4 to see if you have fewer than 12 cans of baked beans in stock. If there are fewer than 12

Figure 2: Commission Payments to Salespeople

	A	B	C	D	E	F
1						
2	Name	Quota	Actual Sales		Commission	
3						
4	Albert, James	125,000	128,000		1,295	
5	Baumann, Scott	140,000	140,000		1,400	
6	Cohen, Anita	100,000	119,000		1,285	
7	Merritt, Michael	135,000	131,000		1,310	
8	.	.	.			
9	.	.	.			
10	.	.	.			
11						
12						

F4: @IF(D4>B4,B4*.01+(D4-B4*.015),D4*.01)
 F5: @IF(D5>B5,B5*.01+(D5-B5*.015),D5*.01)
 F6: @IF(D6>B6,B6*.01+(D6-B6*.015),D6*.01)
 F7: @IF(D7>B7,B7*.01+(D7-B7*.015),D7*.01)

These formulas compare the values under the headings "Actual Sales" and "Quota". The company's sales staff makes a 1% commission on sales up to their quota, and a 1.5% commission for sales beyond their quota. If a person's sales exceeds their quota, the formula computes a commission of 1% for all sales up to the quota and 1.5% for all sales beyond the quota. Otherwise, the formula uses the 1% commission rate.

Figure 3: Gradebook That Counts Failing Students

	A	B	C	D	E	F	G	H
1								Count of
2	Name	Midterm	Final					Failing Students
3								
4	Susan Adams	60	58				1	
5	James Baker	56	59				1	
6	Emily Merritt	75	72				0	
7	Jeniffer Merritt	87	92				0	
8	.	.	.					
9	.	.	.					
10	.	.	.					
11	.	.	.					
12								
13	Number of Failing Students =		2					
14								
15								

G4: @IF(D4<65,1,0)
 G5: @IF(D5<65,1,0)
 G6: @IF(D6<65,1,0)
 G7: @IF(D7<65,1,0)

The formulas in column G test the values under the heading "Final". Students with scores less than 65 are failing. The formula displays a "1" for failing students, otherwise the formula displays a zero.

C13: @SUM(G4..G11)

This formula totals the number of failing students

cans of beans, the number 72 appears in cell D4. If there are 12 or more cans of beans in stock, the number zero appears in cell D4. Cell E4 contains the label "baked beans" and the juxtaposition of cells D4 and E4 generate the message "0 baked beans".

The formula in cell D7 checks to see how many widgets are in stock. If cell B7 indicates there are fewer than 12 widgets in stock, the number 24 appears in cell D7. If there are 12 or more widgets in stock, a zero appears in cell D7. In this example, there are 6 widgets in stock, so the spreadsheet indicates you should order "24 widgets".

Figure 2: The formula in cell F4 checks to determine if the actual sales (cell D4) is greater than the individual's quota (cell B4). If cell D4 is greater than B4, the formula computes 1% of the quota and 1.5% of the difference between the quota and the

actual sales. The formula adds those two amounts together to compute the correct commission. If cell D4 is less than B4, the formula computes 1% of the actual sales.

Figure 3: The formula in cell G4 checks if Susan Adam's final test score is less than 65. If her score is less than 65, the formula displays the number 1 in cell G4. If her grade is more than 65, the formula displays a zero. The formula in cell C13 sums the values in cells G4 through G11; that is the number of students who are failing the course.

Using Formulas in @IF Statements

It is obvious that the basic @IF function adds significant "reasoning" power to the AppleWorks spreadsheet module. But the power of the function is greater than it first appears, because each statement

Spreadsheet Tip...

Figure 4: Symbols You Can Use in an @IF Test

Symbol	Meaning
=	equals
<	less than
>	greater than
<>	not equal to
<=	equal to or less than
>=	equal to or greater than

in the @IF formula can itself be another formula. For example, consider the following:

```
@IF (B3*3>B5, @AVG (A1...A10), @AVG (A11...A19)) .
```

This formula says: "If the number in cell B5 is greater than three times the number in cell B3, compute the average of cells A1 through A10. Otherwise, compute the average of cells A11 through A19.

"Nested" @IF Formulas

You can even use more than one @IF function in a single formula. For example, consider the following formula:

```
@IF (C5>90, 4, @IF (C5>80, 3, @IF (C5>70, 2, 1))) .
```

Reading from the left, this formula says "If cell C5 is greater than 90, display the number 4. If C5 is less than 90, check if C5 is greater than 80. If C5 is greater than 80, display a 3. If C5 is less than 80, check if C5 is greater than 70. If C5 is greater than 70, display a 2, otherwise, display a 1."

This is an example of a "nested" @IF statement; one @IF statement within another @IF statement. AppleWorks allows up to three @IF statements within a single formula.

Conclusion

This month we described the purpose, applications, and syntax of the @IF function that add branching capability to AppleWorks. Next month we will describe two other functions you can use to develop branching spreadsheets.

[Warren Williams teaches in the Educational Technology program at Eastern Michigan University. He is a technical advisor to NAUG and a frequent contributor to the AppleWorks Forum.]

Beagle Bros Update

Here are the current version numbers for the Time-Out enhancements to AppleWorks:

DeskTools	2.0	QuickSpell	2.0
DeskTools II	1.1	SideSpread	2.1
FileMaster	2.1	SpreadTools	1.1
Graph	2.0	SuperFonts	2.0
MacroTools I	2.3	Thesaurus	1.0
MacroTools II	1.3	UltraMacros	2.3
PowerPack	1.2		

NAUG members can get the latest versions from NAUG's "Beagle Buddies", Bruce Shanker and Oliver Roosevelt. Send you original disk(s) and \$2.50 for the first 5.25-inch disk and \$1 for each additional disk, or \$3 for the first 3.5-inch disk and \$2 for each additional disk to: Bruce Shanker, 1279 Boyd Road, Warminster, PA 18794, or Oliver Roosevelt, Box 303, Fairforest, SC 29336.

Corrections

- The Public Domain Library Update in the March 1989 issue of the **AppleWorks Forum** describes "Invoice Manager", a powerful set of spreadsheet templates that automate the production of invoices. That program is shareware. Users of the program should send \$10 to JEM Software, 24812 Celtic Court, Ramona, California 92065.
- The Hard Disk Primer article in the April 1989 issue indicates that if you install an Apple SCSI Rev. C. card in slot 5 of an Apple IIgs, you can have seven devices or volumes connected to the card. Actually, the Apple SCSI card allows seven devices regardless of the slot you use on the IIgs. The one exception is slot 3; you should not insert an Apple SCSI card in slot 3.
- That same article includes a table comparing 16 different hard disk drives. Make the following correction in the table: The CMS drives do not control the timing of the bootup process in the computer. You must turn on the CMS drives first and let them reach operating speed before turning on your computer.

HELPWORKS

For the Beginner to the Expert

Comprehensive HELPWORKS Book

- Site License available
- 317 page manual.
- Covers all aspects of APPLEWORKS
- Quick references & detailed instructions
- Working sample files, templates, & explanations
- ON LINE HELP
- A Data Base explaining all OA-Key Commands
- A Data Base answering APPLEWORKS questions
- Over 120 Templates, sample files, and examples on disk
- Specific Templates for business, home, sports, education
- \$79.95 - Includes Manual and four 5.25" disks
- \$89.95 - Includes Manual and two 3.5" disks


Computer Tutor, Inc.

1001 15th Pl • Plano, Texas 75074 • (214) 423-2772 • 1-800-472-0071

Cross-Works: An Excellent File Transfer and Data Conversion Utility

by Robert J. Netro

Do you need to transfer data between MS-DOS computers? Cross-Works is a file transfer/data conversion program that makes this process easy.

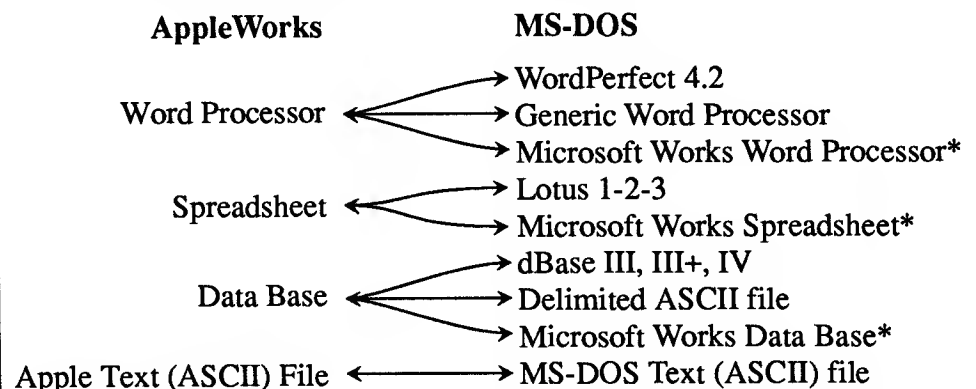
Functionality

There are two problems involved in linking Apple and MS-DOS computers. First, the systems use different format disks; neither computer can read a data disk generated by the other system. Second, the programs used by the two computers store data in different formats. Even when you transfer an AppleWorks file to an MS-DOS format disk, there are no popular MS-DOS programs that can read the AppleWorks file.

Until now, the answer was to transfer ASCII text files between the two computers. (Warren Williams' article entitled "How to Transfer Files into AppleWorks", in the September 1988 issue of the *AppleWorks Forum* gives step-by-step directions on how to transfer AppleWorks files to MS-DOS systems.) Now Cross-Works offers a better way to accomplish this transfer.

Cross-Works is a combination of software and hardware that makes it easy to transfer data between AppleWorks and the most popular MS-DOS programs: WordPerfect, Lotus 1-2-3, and dBase III, III+, and IV. This is a two-way transfer: Cross-Works also lets you transfer these MS-DOS files into AppleWorks.

Figure 1: Cross-Works Conversions



**Planned as an extra-cost option for release in mid-1989.*

Figure 1 depicts Cross-Works' transfer capabilities. Unfortunately, this diagram masks much of the file transfer power of the program. Since WordPerfect 5.0 can read and write WordPerfect 4.2 files, you can use Cross-Works to transfer files between AppleWorks and WordPerfect 5.0. Microsoft Works, Multiplan, Quattro, Excel, SuperCalc 4 and 5, Symphony, and other MS-DOS spreadsheet programs can read Lotus 1-2-3 files. Thus, you can transfer an AppleWorks spreadsheet onto an MS-DOS disk in Lotus 1-2-3 format, and read that file directly into any of these other programs.

Similarly, there are at least 37 MS-DOS programs that read dBase files; you can transfer your AppleWorks data base into dBase format and read that file into any of the 37 programs listed in the Cross-Works documentation.

In addition, Cross-Works offers two "Alternate Conversion" procedures that let you transfer files

Software Review...

between the two computers. One procedure lets you transfer ASCII text files between computers. Since AppleWorks and most MS-DOS computers can handle ASCII files, this approach lets you transfer data between AppleWorks and virtually any MS-DOS word processing program.

Cross-Works also converts AppleWorks data base files into "Delimited ASCII files". Most MS-DOS data base programs can read Delimited ASCII files, so you can convert your AppleWorks data base for use with Paradox, DataEze, and other powerful MS-DOS data base programs.

Finally, SoftSpoken promises additional conversions to and from Microsoft Works; these conversions should be available by mid-1989.

The Hardware and Software

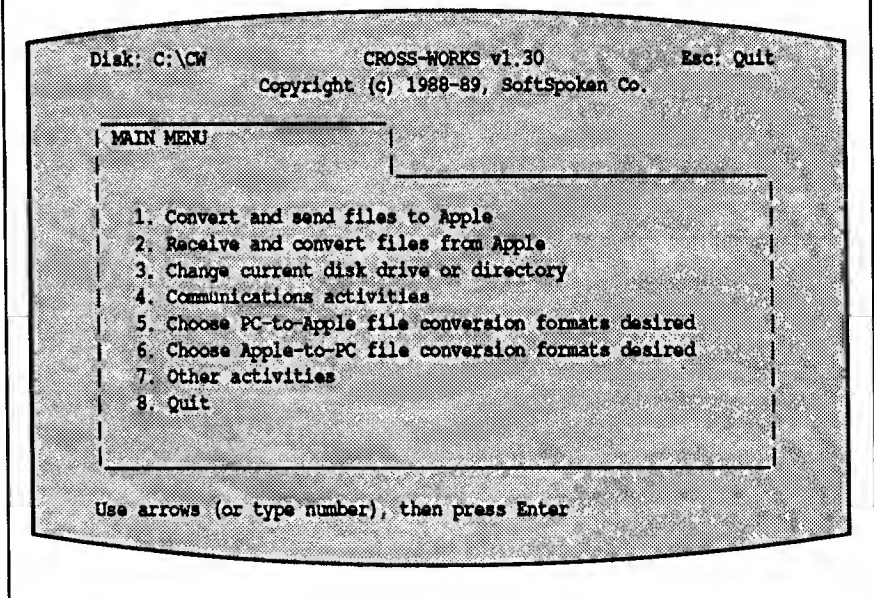
The Cross-Works package includes four disks: 3.5-inch and 5.25-inch program disks for the Apple, and 3.5-inch and 5.25-inch disks for the MS-DOS computer. Neither the Apple, nor the MS-DOS software is copy-protected.

The package also includes an eight-foot, high-quality cable you can use to connect the two computers. The cable has three different Apple connectors and two IBM connectors. This configuration lets you use the built-in modem port in all Apple IIc, IIc Plus, or IIGS computers to transfer data to any MS-DOS system. Apple IIe owners need a Super Serial card, which is not supplied with the program; IIc, IIc Plus, and IIGS owners need no additional hardware to use the program.

How to Use the Program

If you are familiar with AppleWorks, you will be comfortable with Cross-Works; the screen layouts and menu navigation emulates the AppleWorks environment. (See *Figure 2* for a sample Cross-Works menu.) You use the supplied cable to connect the two computers, boot the program on both

Figure 2: Cross-Works Main Menu



the Apple and MS-DOS systems, and navigate through the AppleWorks-like menus.

Imagine you want to transfer a WordPerfect file from an IBM clone into AppleWorks. If the computers are close together, you use the supplied eight foot cable; if not, you connect extension cables as necessary to link the two computers. Then you boot up Cross-Works in both computers. You select choice #3 from the MS-DOS Main Menu and enter the pathname to the WordPerfect file on your hard disk or floppy disk. Then you choose #5 and indicate you want to convert from a WordPerfect file into AppleWorks. Finally, you select item #1, "Convert and send files to Apple".

You make similar entries into the Apple and then start the file transfer. During the file transfer process, Cross-Works displays messages detailing the operation in progress.

The MS-DOS computer controls the transfer and file conversion process; Cross-Works takes advantage of the enhanced processing power of the MS-DOS computer and does all the file conversions in that system. When you transfer from the MS-DOS machine, the software first converts the file and then sends it to the Apple. When you transfer from the Apple, Cross-Works first sends the AppleWorks file to the MS-DOS system, then it converts the file into the appropriate MS-DOS format.

Transfer/Conversion Speed

Cross-Works is fast. Using a direct connect cable, the program reliably transfers files at 19,600 baud; almost 2,000 characters per second. It took less than two minutes to transfer a 75K AppleWorks spreadsheet into Lotus 1-2-3. That includes the time necessary to leave Cross-Works, boot up Lotus, and read the data file into the program.

Modem Transfer

You can also use Cross-Works in conjunction with modems and telephone lines to transfer files between computers that are in different locations. For example, you can use this method to transfer files between an Apple at home and an IBM system at the office. Experienced modem users will find this procedure elementary. I believe communications neophytes will also be successful because Cross-Works automates many of the technical details of the communications process. You only need to select matching baud rates on both systems, select dial or answer mode from within a menu, and command your modem to start the dialing process.

SoftSpoken recommends you use Hayes-compatible modems for this transfer. They also describe how to use other modems for this purpose, but I suggest you contact the company if you do not have a Hayes-compatible modem.

Limitations

As you would expect, Cross-Works is not able to create capabilities that do not exist in a particular program. For example, dBase supports more than 30 categories in a record, AppleWorks does not. If you transfer a dBase file with more than 30 categories per record into AppleWorks, Cross-Works transfers the first 30 categories, then discards the rest.

Similarly, Lotus 1-2-3 supports many functions not available in AppleWorks, and Cross-Works cannot transfer those cells correctly. In addition, Lotus offers separate @HLOOKUP and @VLOOKUP functions that differ from AppleWorks' @LOOK-

Cross-Works and Template Development

Cross-Works has exciting potential for template developers. Until now, developers had to choose between working in the AppleWorks or MS-DOS environment. Cross-Works lets authors work with either computer and transfer files to the other system.

If you plan to use Cross-Works to transfer files between machines, consider doing your authoring in AppleWorks. AppleWorks is less powerful than comparable MS-DOS programs. If you work on an MS-DOS system, you are more likely to use its powerful features and produce formulas that have no corresponding AppleWorks equivalent. By developing the file in AppleWorks, you are likely to develop templates that are easy to convert between systems.

UP. Consequently, Cross-Works does not transfer LOOKUP functions between systems.

You must be realistic when preparing files for transfer and must work to the "lowest common denominator" of both programs. That is, you cannot use a feature or function unless it is supported by both AppleWorks and the MS-DOS program.

Documentation

Cross-Works comes with a clearly written, comprehensive 67-page manual that includes a three page index. Given the clarity of the directions and the well designed user interface, even beginners should have little difficulty using Cross-Works.

The documentation includes an important appendix that details each of the error messages generated by the program and a trouble shooting guide that describes how to fix the most common problems with the program.

Support

In addition to a satisfactory manual, SoftSpoken offers free technical support during normal business hours. This is not a toll-free call, but I was not put in a telephone waiting queue; I received knowledgeable answers to my questions. I consider the company's support to be excellent.

Conclusions

Cross-Works is easy to use and remarkably effective. Setup takes only a few minutes, and most

Software Review...

users will need no additional hardware to transfer files between computers. Given Apple's failure to market an Apple II laptop, the program is also ideal for owners of MS-DOS laptop systems who can now transfer files directly between their laptop computer and AppleWorks.

I consider Cross-Works an outstanding package and an excellent value.

[Cross-Works costs \$79.95 plus \$3.50 for shipping and handling from SoftSpoken, Box 97623, Raleigh, NC 27624, (919) 878-7725. Version 1.3 is current and is compatible with AppleWorks 2.1 and earlier. Registered owners of earlier versions can upgrade to Cross-Works version 1.3 for \$12 plus \$1.50 for each 3.5-inch disk desired. Contact SoftSpoken for shipping costs outside the Continental U.S.]

[Robert J. Netro is President of M.I.H. Associates, an AppleWorks consulting firm in Canton, Ohio. He is the author of numerous AppleWorks templates published by International Apple Core and other vendors.]

Bulletin Board Update

NAUG Upgrades BBS

NAUG recently upgraded the software that controls the Electronic Forum, NAUG's electronic bulletin board service. The new software, ProTree Elite version 1.0.2, offers additional speed and reliability and will eventually let NAUG expand to a multi-line system.

How to Use the New Board

Even if you are a frequent user of the original system, you must log onto the board as a new user. Use the initial of your first name and your complete last name as your identifier; members do not use "handles" on this board.

Enter an "A" at the Main Menu to go to the Apple/AppleWorks message area and then the number "1" to go to the AppleWorks board.

The AppleWorks board includes 15 topics:

- | | |
|--------------------------|------------------------------|
| 1. AppleWorks/General | 9. Disk/Storage Management |
| 2. AppleWorks GS | 10. Expanded Memory |
| 3. Word Processor | 11. Hardware/General |
| 4. Data Base | 12. Business Applications |
| 5. Spreadsheet | 13. Educational Applications |
| 6. AppleWorks Hints/Tips | 14. Other Applications |
| 7. TimeOut Enhancements | 15. NAUG Information |
| 8. Printer Problems | |

Use these commands:

- X: To stop the display at any time.
- J: To jump to any topic area.
- T: To indicate each topic you want to ignore. Enter another "T" to restore those topics to your list of topics to view.
- N: To view the new messages on all remaining topics.
- ?: For help.

The "X" command is a powerful system tool. Type an "X" at any time to immediately stop scrolling messages or menus.

Richard Lewandowski and Tim Harrison, NAUG's Sysops, configured the new system so it resembles the original GBBS board; if in doubt, try one of the old commands. For example, to declare you are done sending a letter or posting a message, press the Return Key and then enter ".s" (for "send") at the beginning of the new line. Enter ".a" to abort the message and ".h" for help.

The new board takes a while to learn, but it offers power, convenience, and reliability not available from the original software. The telephone number remains unchanged — (313) 482-8090.

Beagle Bros Announces New Software, Upgrade Offer

by Cathleen Merritt

Beagle Bros recently released four new products: two TimeOut modules, a font editor, and a full-screen program editor. The company also announced an upgrade program that offers discount prices to individuals who own competing products.

TimeOut TeleComm

TeleComm is a communications program that adds telecommunications capabilities to AppleWorks. The program, written by Mark deJong, lets you communicate with services such as CompuServe and GENie, with bulletin boards, and with other computer users without leaving AppleWorks.

It is TeleComm's integration with AppleWorks that lets the program offer features not available on other telecommunications products. For example, the program lets you capture text directly into an AppleWorks word processor document. You can edit the text, copy it to the AppleWorks clipboard, and transfer text directly into other documents, all without disconnecting from the telecommunications service.

TeleComm makes it easy to transmit AppleWorks documents; the program automatically converts word processor documents on the desktop into ASCII characters during transmission. You can write a letter in AppleWorks, spell check the letter with QuickSpell, invoke TeleComm, and transmit the letter to an electronic mail service or another computer without quitting AppleWorks.

The program offers other features you would expect in a communications package. It supports auto-logon macros (you store the macros in an AppleWorks data base file), XModem and Binary II communications protocols, terminal emulation of VT52, Televideo 912, ADM 3a, and Hazeltine 1510 terminals, and a review buffer that uses all available desktop memory. In addition, TeleComm

offers a split screen mode that displays your typing at the bottom of the screen until you press the Return Key; then TeleComm transmits the entire line of text to the remote computer. This lets you type uninterrupted by other users on the remote computer.

TimeOut TeleComm has a suggested list price of \$69.95. Starting June 15, NAUG will distribute the package to members for \$40.95 plus \$3 s/h.

TimeOut ReportWriter

ReportWriter adds a relational report generator to AppleWorks. The program lets you integrate data from up to 12 data base, word processor, and spreadsheet files into a single report. For example, you can use ReportWriter to prepare invoices that bring business address information from one file, orders from another file, item descriptions from a third file, and price information from a pricing file (see *Figure 1*).

You prepare the report on a full screen editor that scrolls to let you view the complete report area. Each report can be up to 240 characters wide.

ReportWriter has powerful calculation and string manipulation functions. You can calculate any category by performing arithmetic operations on other categories. You can print a sum, count, average, or display the minimum or maximum of a set of numbers. The program does date arithmetic, so you can do aging reports for accounts receivable or payable. Text functions include the ability to concatenate two categories (with or without a space between categories), change text to upper- or lowercase, or to lowercase with the first letter of each word capitalized.

ReportWriter offers "If" logic (to generate an entry or calculation based on any other entry or calculation) and "Lookup" logic to substitute text for a

Beagle Bros Update...

Figure 1: Integrated Invoice Produced by ReportWriter

An invoice generated from five AppleWorks files: a data base of orders, a data base of customers, an inventory data base, a sales tax lookup table, and a shipping charges lookup table.

The Computer Whiz 51 Front Street San Diego, California 92121				
Ship to:		Bill to:		
Dan's Data Center 6200 La Place Circle San Diego, CA 92149		Dan's Data Center PO Box 6502 San Diego, CA 92149		
Terms: Net 30	Shipper: UPS	Invoice Date: 03-31-89		
Number	Description	Qty	Price	Total
C820	Apple IIgs CPU	1	785.00	785.00
M545	RGB Monitor	1	350.00	350.00
D220	3.5-Inch Disk Drive	2	299.00	598.00
Subtotal				1733.00
Sales Tax				112.65
Shipping				22.50
Total				\$1,868.15
WE APPRECIATE YOUR BUSINESS!				

scaling tool to change the size of existing fonts or fonts you create.

The program requires an Apple IIgs, IIe, IIC, or IIC Plus with at least 128K of memory and a mouse. The program works with most popular dot matrix printers and interface cards. The GS Font Editor lists for \$49.95 and will be available from NAUG after June 15 for \$30.95 plus \$3 s/h.

Other Products

Beagle Bros also introduced Program Writer, a full-screen

editor for Applesoft BASIC, which carries a list price of \$49.95.

Finally, the company announced release of version 3.0 of Point-To-Point, a popular telecommunications program written by Gary Little and formerly distributed by Pinpoint Publishing. Version 3.0 offers a larger review buffer than previous versions of the program and supports VT100 terminal emulation. The program has a list price of \$99.95 from Beagle. Owners of earlier versions of Point-To-Point can update to version 3.0 for \$30 plus \$3.50 s/h; send your original PTP program disk and payment directly to Beagle Bros.

Program Writer and Point-To-Point will not be available from NAUG.

Trade-In Program

Pinpoint Publishing is no longer in business, and Beagle Bros is offering owners of Pinpoint products an attractive trade-in program for various TimeOut modules. *Figure 2* summarizes the offer. In addition, Beagle Bros announced that owners of any AppleWorks-compatible spell checking program can trade in that program for QuickSpell for \$35 plus \$3.50 s/h. Return your original disk and payment to Beagle.

[Beagle Bros, 6215 Ferris Square, Suite 100, San Diego, California 92121.]

Figure 2: Beagle Bros Trade-In Offer

Pinpoint Product	TimeOut Module	Price*
Keyplayer	→ UltraMacros	\$30
Graphic Edge	→ TimeOut Graph	\$45
Document Checker	→ QuickSpell	\$35
Spell Checker	→ QuickSpell	\$35
Desk Accessories	→ DeskTools or DeskTools II or PowerPack	\$25

*All prices plus \$3.50 s/h. Order direct from Beagle Bros.

value or number for a value. (A good application of Lookup is to generate shipping rates based on an individual's zip code.)

ReportWriter, written by Dan Verkade, lists for \$79.95. Starting June 15, NAUG will distribute the package to members for \$46.95 plus \$3 s/h.

GS Font Editor

The Beagle Bros GS Font Editor is a stand-alone program that lets you create and modify fonts that work with SuperFonts, AppleWorks GS, and Publish-It. (Note: The phrase "GS Fonts" is misleading because you can use these fonts with SuperFonts and Publish-It on the Apple IIe, IIC, and IIC Plus.)

The program, written by Beagle Bros President Mark Simonsen, offers a collection of drawing tools that let you design or modify a font. You can produce fonts up to 127 points in size and can use a

How to Print the Current Date in Boilerplate Text

by H. Eric Branscomb

Boilerplate" is the name given to documents you print repeatedly with slight changes. Examples of boilerplate include requests for payments, certain legal documents, and most form letters. You can use the Mail Merge function within AppleWorks to produce personalized boilerplate documents by merging a data base file with text written in the word processor module.

Unfortunately, AppleWorks' Mail Merge module does not have the power to insert the current date into a boilerplate document. You can issue an Enter Keyboard Command in the word processor file, but then you must type the date in manually for each document you produce.

Here is a technique you can use with a macro program to automatically print the date in your Mail Merge documents. I will assume that (a) you are familiar with the procedures necessary to compile a macro and save the macro table as the default set, [Ed: For step-by-step directions, see the *Macro Primer* article in the December 1988 issue of the *AppleWorks Forum*.] and, (b) you use TimeOut UltraMacros. You can adapt these procedures to other macro programs.

Follow these steps:

1. Type "@date" (do not type the quotation marks) where you want the date to appear in the final document. For example, a letter heading designed for Mail Merge looks like this:

```
@date
^<FIRST.NAME> ^<LAST.NAME>
^<STREET1>
^[STREET2]
^<CITY>, ^<STATE> ^<ZIP>
```

2. Modify the <sa-P> macro supplied with UltraMacros. The original macro looks like this:

```
P:<awp><oa-P rtn rtn rtn>!
```

This macro works in the word processor module, activates the Print Command with an Open-Apple-P, and presses the Return Key three times to accept AppleWorks' print defaults of "Print From Beginning", printer #1, and print one copy of the document.

To print the date in the current document, you need a nested macro, one that <sa-P> will call. Name your new macro <ba-\> and define it in your macro table like this:

```
<ba-\>:<awp><oa-1 oa-R>T<oa-Y>@date<rtn>
<sa-'><rtn>a!
```

This macro searches for the text string "@date" and replaces it with the current date using the <sa-'> built-in UltraMacros. <sa-'> automatically prints the current date.

3. Modify the <sa-P> macro so it calls the <ba-\> macro as follows:

```
P:<awp><ba-\ : oa-P rtn rtn rtn>!
```

If you use the macro for Mail Merge, insert an additional "rtn" so the macro reads:

```
P:<awp><ba-\ : oa-P rtn rtn rtn rtn>!
```

4. Compile the new macro table and save it as the default set.

Now, when you activate the <sa-P> macro, the macro will search the current word processor document for the string "@date" and replace that string with the date generated by <sa-'>. If AppleWorks does not find the string "@date", it continues without interruption and prints your document normally.

[H. Eric Branscomb teaches writing courses at Northern Essex Community College, in Haverhill, Massachusetts. He also coordinates the "new user" interest group for the Apple Manchester Users Group.]



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How to Set Up A Hard Disk Drive

by Gary R. Morrison

This is the third in a series of articles designed to help you select, install, and use a hard disk drive with AppleWorks. Last month, Dr. Morrison described how to select a hard disk system. This month, he describes how to connect and partition hard disks designed for the Apple IIe and IIGS.

The initial setup of a hard disk drive is a fairly simple task, but the decisions you make will have a dramatic impact on the performance of your system. In this article, I will describe how to install and partition a hard disk drive system.

A word of caution before we begin: Each hard disk system comes with a set of instructions for installing the components. I urge you to read those instructions and this article completely before installing your hard disk.

What Is in the Box?

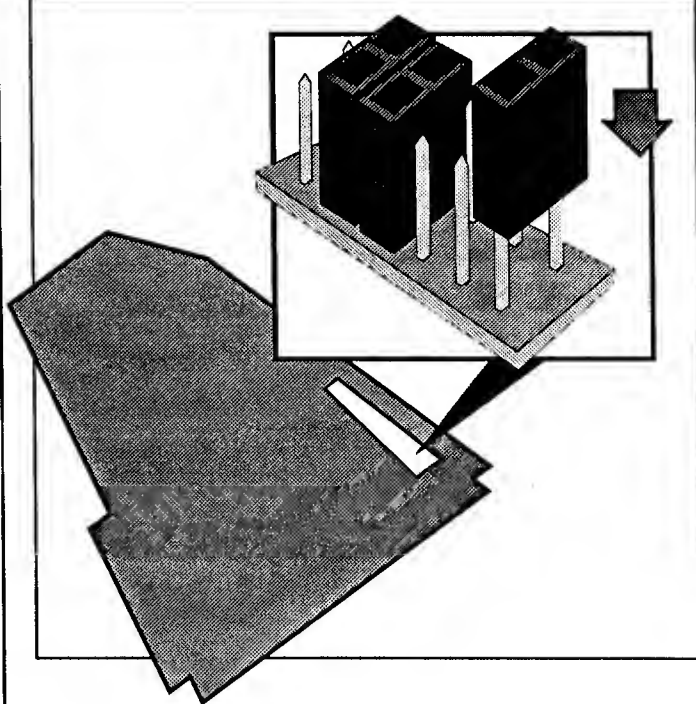
Most hard disk systems include three components: An interface card (often called a “SCSI card”), a hard disk drive, and a cable to connect the drive to the interface card. Your package may contain a small component called a “SCSI terminator”. Finally, your system may include a disk with important utility programs.

Some hard disk systems require that you adjust hardware settings before you use the drive. Examine the drive and interface card for “DIP” switches or jumper pins and blocks. (*Figure 1* depicts a set of jumper pins.) For example, both the Apple SCSI card and CMS interface card use jumper pins. The factory-set configuration usually works well, but read the directions to insure you set the jumpers and switches correctly for your application.

Installing the Interface Card

Now you are ready to install the interface card into your IIe or IIGS. Turn off the computer and remove

Figure 1: Jumper Pin Array



the cover, but leave the power cord attached to the wall outlet or power strip. Then, before touching any card, touch the large, metal power supply box inside the Apple II to discharge the static electricity in your body.

Gently insert the hard disk interface card into slot 7 of your Apple II. Many programs expect to find certain devices in specific slots. For example, you usually plug a modem into slot 2, a mouse into slot 4, and a 5.25-inch disk drive into slot 6. Slot 7 is the traditional location for a hard disk, and using

Hard Disk Primer...

this location insures that your computer will boot from the hard disk.

Connecting the Drive

Determine where you will place your drive. Make certain the location provides a solid, vibration-free base, unrestricted airflow to cool the drive, and access to 120 volt electrical power. Then, connect the cable to the controller card and to the drive. Most cables have connectors that only fit a certain way; you cannot install those cables incorrectly. Other cables have a single colored wire that indicates the top or bottom edge of the cable; check the directions for the correct way to connect your cable.

If your disk drive has an external "SCSI Terminator", attach the terminator to the unused port on the back of the disk drive.

When you select an electrical outlet for your drive, remember that all hard disks require a moment to reach full speed when you turn them on. Sider drives control the timing of the power-up sequence; if you own a Sider, you can turn on your computer and hard disk at the same time with a power strip. Apple, Chinook Technology, and CMS, drives require that you turn the drive on first, then wait for it to reach full speed before you turn on your computer; you should use a wall socket or separately switched outlet with these drives.

SCSI "ID" Numbers

Each SCSI device you connect to your system must have a unique "ID" number between one and seven. These ID numbers let your computer differentiate between devices and also sets the priority for each device. You only have to change these numbers if you have two or more devices in a single SCSI daisy chain, so most users do not need to change SCSI ID numbers. However, here are the rules for device numbers:

1. Each device must have a different number. You cannot have two devices with the same ID number on a daisy chain.
2. The higher the number, the higher the priority of the device. Your computer automatically has a device number of seven, the highest priority. If you have more than one SCSI device in the daisy chain, you should assign the next highest number (e.g., six) to the hard disk drive you want to use to boot your computer. If you add a second SCSI hard disk to the chain, you should assign it a number lower than the first drive. In that way, your computer will continue to boot from the first hard disk drive.

SCSI ID numbers are usually set in one of four ways: (a) with a push switch you press repeatedly until the desired ID number shows, (b) with a rotary switch you turn with a screwdriver until a pointer indicates the device number you desire, (c) with a combination of DIP switches you rearrange to identify the device number, or (d) with software that comes with your disk drive system.

If you buy a second SCSI hard disk, you will have to refer to the directions that come with both drives for information about setting SCSI device numbers.

That completes the physical installation of your hard disk drive system. Now you must configure the drive and install the operating system, programs, and data files on the drive.

Pre-formatted Disk Drives

Some manufacturers (e.g., CMS and Chinook Technology) format their drives and install an operating system before shipping the equipment to the customer. You can test if your disk drive includes an operating system by trying to boot your computer from the drive. Close the cover on your computer, turn on the power to the hard disk, and turn on the computer. If you see a program selector or the Apple IIGS Finder desktop, you can start copying programs and data onto the hard disk — a process I will describe next month.

If Your Hard Disk Does Not Work

If your computer does not boot from the hard disk, check with the disk drive manufacturer to see if they pre-format their drives and install an operating system. If the company installed an operating system, you should check the interface card, power supply, and cable connections; your computer should boot from the drive.

Special Concerns for Sider Owners

Sider drives include a proprietary interface card; this card offers some performance benefits, but is not Apple-SCSI compatible. As a result, you must use different methods to partition the various model Sider hard disks.

The Sider D2 supports multiple operating systems, and features a proprietary utility to partition the disk. If you have a D2, boot your system from the Sider Utility Disk and follow the on-screen directions to partition the drive.

The interface card shipped with

the Sider D4/A, D4/Turbo, D7/T, D9, and C96 drives pre-sets the partition size. If you use this interface card you cannot re-partition these drives.

The D7/T, D9, and C96 drives work with Apple's SCSI card. If you want to partition these drives with the GS/OS Advanced Disk Utilities program, you must replace the Sider interface with an Apple SCSI card.

Other Sider drives cannot use the Apple SCSI card and cannot be partitioned with GS/OS.

Finally, the Sider interface card is not compatible with the standard version of GS/OS. You must purchase First Class Peripheral's special version of GS/OS if you want to run GS/OS on a system equipped with a Sider interface card.

If you have a Sider D7/T, D9, or C96, you can replace the Sider interface card with an Apple SCSI card and use a standard version of GS/OS.

If you have an Apple IIGs, check if the Control Panel is set correctly. Press Control, Open-Apple, and Escape to call up the Desk Accessories menu, then select "Control Panel". Check under the "Slots" item. The Control Panel should say "Slot 7: Your Card" and "Startup Slot: Scan".

Most hard disk installations are simple; if you have a problem installing your system, it is time to call the technical support staff of the hard disk manufacturer. *[Ed: The addresses and phone numbers of the most popular manufacturers appears in the April 1989 issue of the AppleWorks Forum.]*

Customizing Your Hard Disk System

While many disk drives come ready to use, you should consider customizing your system. That involves partitioning the disk into separate volumes, and installing an operating system and program selector software. In the remainder of this article, I will describe how to partition a disk into separate volumes. Next month I will describe how to install an operating system, how to install program selector software, and how to create an appropriate subdirectory structure for your disk.

You Should Partition the Drive

While you do not have to partition a hard disk drive into separate volumes, you probably should partition the drive. Here's why:

ProDOS can access a maximum of 32 megabytes in each "volume" or segment of a disk drive. If your hard disk drive can store more than 32 megabytes, you must partition the drive into smaller volumes to use the full capacity of the drive.

Even if you have a 20-megabyte drive, you should consider partitioning the drive. Partitioning the drive lets you keep your programs on one volume on the drive and your data files on a separate volume. The advantage of separate volumes for data and programs becomes evident when you backup your disk. The backup process is time consuming; it takes about 30 minutes to backup a 20-megabyte hard disk. However, there is no reason to make backup copies of your program files on the hard disk. (If your disk fails, you still have the original program disks you copied onto the hard disk.) If you create two separate volumes, say a 10-megabyte volume for your programs and a 10-megabyte volume for data, you can save time by only backing up the files on the data volume.

Hard Disk Primer...

To be more efficient, you should consider partitioning your system into at least two volumes; one for programs and one for data. Each volume will require its own name; I recommend short names like HARD1 and HARD2 or PROGRAMS and DATA for each volume on the disk.

How to Partition the Drive

Method 1: Hardware — CMS drives specify partitions by the location of jumpers on the controller card. You partition these drives by moving the jumpers on the interface card using the directions in the CMS documentation. Most Sider drives use pre-set partitions on the interface card; see the sidebar “Special Concerns for Sider Owners”.

Method 2: Proprietary Software — Sider D2 drives come with a utility program that lets you partition the disk. Turn off the hard disk and boot your Apple with the Sider Utilities Disk. Then, turn on the power to the hard disk and follow the directions on the screen. The Sider D2 lets you format each partition in a different operating system. That accommodates older DOS 3.3 programs and Pascal-based programs. Most AppleWorks users should partition all volumes as ProDOS volumes.

Method 3: Apple SCSI Utilities — Apple’s SCSI Interface Card comes with a Utilities Disk that lets you format and partition a drive. If you have an Apple IIe and purchase an Apple Computer or Chinook Technology drive (both use the Apple SCSI Interface Card), you should turn off your hard disk, boot your Apple with the SCSI Utilities Disk, turn on the power to the hard disk, and follow the directions on the screen.

Partition IIGS Drives with GS/OS

Method 4: GS/OS Advanced Disk Utilities — You could use the SCSI Utilities disk to partition a hard disk drive for your Apple IIGS, but IIGS users should consider using the GS/OS partitioning program to partition their hard disk drive. Unlike the SCSI Utilities, GS/OS lets you partition the drive into as many as seven different volumes; the SCSI Utilities Disk allows only two. Volumes created by GS/OS can also be formatted for different operating systems.

You must use an Apple SCSI Card to partition your drive with GS/OS. *[Ed: Although all Chinook drives are Apple SCSI-compatible, early systems were supplied with a proprietary SCSI interface card; you cannot use the Chinook interface if you want to partition a Chinook drive with GS/OS.]*

You need the complete GS/OS software (\$39 from Apple dealers with documentation or \$12 plus \$2 shipping from NAUG without documentation) to perform this task. Follow these steps to partition your drive with GS/OS:

1. Turn on the hard disk drive.
2. Insert the GS/OS System Disk in a 3.5-inch drive and boot the computer from that drive.
3. If you have two 3.5-inch drives, insert the System Tools Disk in the second drive. Otherwise, replace the System Disk with the System Tools Disk.
4. Double-click on the System Tools Disk icon.
5. Double click on the “Adv.Disk.Util” icon to launch the Advanced Disk Utilities program. GS/OS may ask you to swap disks; follow the on-screen directions.
6. Issue an Apple-I command to indicate “Initialize”. A dialog box will appear.
7. Click on “Volume” until the picture of a hard disk appears on the right-hand portion of the screen.
8. Click on “Partition”. (If “Partition” is not available, your hard disk system is not fully Apple SCSI-compatible and cannot be configured with GS/OS.)
9. Decide how many volumes you want and the size of each volume. Enter the name of the first volume and drag the scroll bar so the volume is the correct size.
10. Click “New” to accept the first partition.
11. Specify additional volumes as needed.
12. When you finish segmenting your hard disk, click on “Partition”.
13. GS/OS may now ask you to specify the operating system for each partition. For AppleWorks,

Hard Disk Primer...

AppleWorks GS, and most applications, select ProDOS. However, you can specify other operating systems if they appear on your menu. Click "Initialize" for each volume you specified.

14. Press an Apple-Q to Quit from the Advanced Disk Utilities.

Conclusion

Your hard disk is now ready to accept programs and data. Next month I will describe how to install an operating system on the drive and will discuss program selectors that make it easy to manage your disk drive system.

[Dr. Gary R. Morrison is an Associate Professor at Memphis State University. He is author of the book "ProDOS 8 and 16", RepairWorks, and numerous other articles and software.]

The author appreciates the technical support he received from Walker Archer of Quality Computers.]

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AppleWorks GS Tip

Use Startup Files to Save Keystrokes

by James Smith

You know that AppleWorks GS is a large and powerful program. While you could never tell from its size, the developers of AppleWorks GS had to make choices about what to include in the program and what to omit.

One of their decisions was to omit macro capabilities. That is, AppleWorks GS, like unenhanced AppleWorks, cannot memorize your keystrokes. As a result, you will find yourself entering text repeatedly, particularly in word processor documents.

Here is a work-around that helps overcome this limitation. The concept is one of a "startup file". A startup file contains the beginning of a document, but is incomplete. When you begin a new document, you bring the startup file onto the desktop, move the cursor to the end of the file, and type the remaining text in the document.

One useful startup file should contain your home letterhead. To develop a home letterhead startup file, you create a new document and type in your letterhead, but no additional text. Format the document; i.e., center the text and select attractive fonts. Then save this document in a file called "LETTERHEAD" on a separate disk or subdirectory named "Startup Files". Whenever you need to write a letter, load the LETTERHEAD file onto your desktop, scroll to the bottom of the document, and start typing. You will never have to type the letterhead again. When you are done, select "SAVE AS" from the File Menu, change the name of the document, and save the document onto a different data disk or subdirectory.

You can collect a series of startup files with letterheads and frequently used text. Keeping them on a separate disk or in a separate subdirectory helps you stay organized.

[James Smith is Technical and Support Services coordinator for NAUG.]

Exchange Your ImageWriter LQ

by Cathleen Merritt

Acknowledging print quality and noise problems with the ImageWriter LQ printer, Apple Computer recently re-engineered various troublesome components and is offering free replacement of all ImageWriter LQ printers manufactured before March 7, 1989. This includes ImageWriter LQ printers with serial numbers *below* 1831011013.

Changes in the design include the following:

1. Modification of the tractor feed mechanism to correct problems printing at the top and bottom of the page on tractor feed paper.
2. The addition of sound-deadening materials to reduce printer noise.
3. Re-design of the print head to reduce noise when printing graphics and to improve print quality in graphics mode.

How to Proceed

You can exchange your printer through any authorized Apple dealer. Dealers are not required to offer an immediate exchange for your unit, but they are authorized to air freight your printer to Apple for replacement. Contact a local dealer to arrange for the exchange.

Whether or not you experience problem with your ImageWriter LQ, NAUG suggests you exchange your printer. Some of these problems do not manifest themselves when you print standard text characters but do occur when you print graphics or use the ImageWriter LQ with a Macintosh computer, with AppleWorks GS, with TimeOut SuperFonts, or with programs like Print Shop.

This program does not cover ImageWriter I or ImageWriter II printers; it specifically addresses problems with the 24-pin ImageWriter LQ. All replacement printers include a 90-day warranty.

Zip Technology Update

Zip Announces New Apple II Speedup Options

Zip Technology recently announced it will produce two new speed-up products for Apple II-series computers.

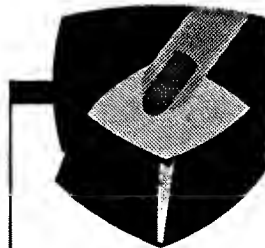
ZIP-GS

The ZIP-GS is a speed-up board that fits in a peripheral slot in the Apple IIGs. The company claims the product lets the IIGs run at speeds as fast as 8 megahertz. (A IIGs normally runs at 2.8 MHz.) Zip claims that the board uses extremely low power, lets the user select the speed for each peripheral slot, and can be enabled or disabled directly from the keyboard. At press time, Zip has not announced a price nor shipping date for this product.

Faster Zip Chip

Zip also announced plans to produce an 8-megahertz version of its Zip Chip for Apple II+, IIe, and IIC computers. The company claims that the new chip operates at twice the speed of the original 4 megahertz Zip Chip product. (A standard Apple IIe or IIC operates at 1.04 megahertz.) The new chip will list for \$189, but Zip Technology plans to introduce a reduced-price upgrade program for owners of the original 4-megahertz chip.

NAUG will notify its members when we receive sample products for evaluation.



Macro Authors

The National AppleWorks Users Group is preparing a disk of macros for inclusion in the NAUG Public Domain Library. If you have an UltraMacros-compatible macro you would like included in the library, send NAUG a disk with the macro and a brief word processor file describing its function and use. If NAUG uses your macro, you'll get a free copy of the final compilation.

An Introduction to Variables

by Mark Munz

In the previous two articles in this series, I introduced numerous UltraMacros commands that let you control AppleWorks. This month, I move away from discussions of specific tokens and commands and look at an important theoretical construct; the topic of variables.

Variables

You already know that UltraMacros can store numbers and text in identifiable memory locations. We call each location a “variable”, because it stores data that can vary. For example, memory location A is “variable A”. Variables A through Z can each store any positive integer between zero and 65355.

UltraMacros can store up to 26 different numbers in variables A through Z, and ten strings of text in variables \$0 (pronounced “String Zero”) through \$9. Each “string variable” can store up to 80 characters of text.

Defining Variables

You “define” a variable by storing something in that memory location. For example, if you issue the UltraMacros command `<$1= “Letter Template”>` you define variable String One by saying it will contain the text “Letter Template”.

You can always use UltraMacros’ `<msg>` (message) command to view the contents of a variable. For example, the command `<msg $1>` displays the contents of variable \$1.

Literal Definition of Variables

There are different ways to define variables. The most direct way to define a variable is to tell UltraMacros to store a specific value or text in the variable. *Figure 1* includes five macros that store specific values or text in variables.

Figure 1: Macros That Store Literal Values in Variables

```
1:<all: A = 1 : msg A>!
2:<all: B = $10 : msg B>!
3:<all: $0 = "Text" : msg $0>!
4:<all: $3 = "You can use 'single quotes'" : msg $3>!
5:<all: $4 = 'Or "double quotes" in a message' : msg $4>!
```

Each macro in *Figure 1* defines a numeric or string variable and uses the message command to display the contents of that variable at the bottom of the AppleWorks screen. I suggest you enter, compile, and run each macro. *[Ed: Step-by-step directions that describe how to compile a macro appear in the Macro Primer article in the November and December 1988 issues of the AppleWorks Forum.]*

Macro `<sa-1>` stores a value of 1 in variable A and displays the variable.

Macro `<sa-2>` is more complex. The dollar sign means two different things in UltraMacros (and in many other programming languages). A dollar sign before a number indicates that the number is a hexadecimal number. The hexadecimal number system is a “base 16” system, so “\$10” means you want the hexadecimal number “10”, which equal “one sixteen plus zero ones”. Thus, \$10 is equivalent to the decimal number 16. When you run this macro, UltraMacros will display the number 16 at the bottom of the AppleWorks screen; that is, it displays the decimal number equivalent of \$10.

Macro `<sa-3>` stores the string “Text” into the string variable \$0 and displays the contents of this variable at the bottom of the screen.

Note that you must use either single or double quotes before and after the text you want to store in the string variable. Everything between the quotation marks becomes part of the variable; e.g.,

Figure 2: Tokens That Define Numeric Variables

```
A:<all: $1 = "Length of String" : Z = len $1 : msg Z >!  
B:<all: $1 = "10" : X = val $1 : msg X >!  
C:<all: Z = key : msg Z >!  
D:<all: posn X,Y : msg X : msg Y>!
```

Figure 3: Converting Strings to Numeric Values

\$1 = "Ten"	val \$1 = 0
\$1 = "10"	val \$1 = 10
\$1 = "15Hello"	val \$1 = 15
\$1 = "15 Hello"	val \$1 = 15
\$1 = "X100"	val \$1 = 0
\$1 = "#3"	val \$1 = 0
\$1 = "11 + 3"	val \$1 = 11

<\$5 = ' Hi there! '> defines variable \$5 to contain two spaces, the letters "Hi there", the exclamation mark, and two more spaces. You can use either single or double quotation marks to define a string variable. If you use a single quotation mark to start the definition, you must use a single quotation mark to end the definition.

Finally, note that a colon must follow the definition of every string variable.

Macros <sa-4> and <sa-5> show that you can place either single or double quotes inside a variable.

Commands That Define Numeric Variables

So far, we defined variables by storing something directly into a memory location. A number of different UltraMacros commands also define variables. For example, *Figure 1* in last month's article includes the UltraMacros statement: <\$0=screen 1,24,4>. That statement defines variable \$0 so it contains the first four characters at the beginning of row 24 on the AppleWorks screen.

Figure 2 contains macros that use the UltraMacros <len>, <val>, <key>, and <posn> tokens to define numeric variables. I suggest you enter, compile, and run these sample macros.

Macro <sa-A>: The <len> command tells UltraMacros to determine the number of characters in a

text string. So the command <Z = len \$1> says, "Store the number of characters in \$1 in a new variable named Z".

Macro <sa-A> starts by defining variable \$1 so it contains the text "Length of String". Then the macro uses the <len> command to store the number of characters in "Length of String" in variable Z. (There are 16 characters in "Length of String" because spaces count as characters in a text string.) Then the macro displays the value of variable Z at the bottom of the AppleWorks screen.

Macro <sa-B>: The difference between numeric and string variables is important in a programming language. For example, if you store the characters "255" in a string variable, you cannot do mathematics on the number; UltraMacros treats these characters as text, not as numbers. The <val> command tells UltraMacros to check if a variable contains a number in text format and to convert that text string into a numeric variable. In this case, <X = val \$1> says "Convert the text in variable \$1 into a value and store that number in variable X." If the variable starts with a number, <val> converts that number. If the variable does not start with a number, <val> stores a zero in variable X. See *Figure 3* for examples of what <val> stores under various conditions.

Macro <sa-B> starts by defining variable \$1 so it contains the numeric characters "10". Then the <val> command defines variable X to contain the number 10. The message command prints the number 10 at the bottom of the AppleWorks screen.

Macro <sa-C>: The <key> command generates the numeric ASCII value of any key you press. (I described the <key> command in the March 1989 issue of the *AppleWorks Forum*.) For example, pressing the Escape Key yields the ASCII value of 27. Macro <sa-C> captures that keypress and stores the ASCII value in the numeric variable Z. The macro then displays the ASCII value of the keypress at the bottom of the AppleWorks screen. (See page 16 of the March 1988 issue of the *AppleWorks Forum* for a list of the ASCII equivalents for all keystrokes available from the Apple keyboard.)

Macro <sa-D>: The <posn> (position) token identifies the coordinates of the cursor position. <posn> generates two values you store in separate numeric variables; e.g., the statement <posn X,Y> stores the coordinates of the current cursor position in variables X and Y.

In the word processor, the <posn> token generates the column and line number of the current cursor position. In the data base, <posn> generates the category and record number of the cursor location. (Thus, you can use <posn> to insert record numbers automatically in a data base file.) In the spreadsheet, <posn> generates the column and row number of the current cursor position.

Macro <sa-D> uses the <posn> token to store the cursor coordinates in numeric variables X and Y. The macro then displays the value of variable X. When you press any key the macro displays the value of variable Y.

Manipulating Numeric Variables

UltraMacros lets you add, subtract, multiply, and divide numeric variables. For example, the expression <A = A * A> multiplies the numeric value of variable A by itself (i.e., squares the number) and replaces the number originally stored in variable A with the square of that number. Similarly, <Z = Z - 1> subtracts one from the current value stored in Z and replaces the original value in Z with the new value.

I will describe how to use these numeric manipulations to control program flow in future articles in this series.

Defining Numeric Variables with Expressions

You can also write numeric expressions that define new variables. *Figure 4* includes examples of expressions that define new variables.

Macro <sa-E> uses the expression <A = 1> to create a new variable "A", that contains the value 1. Then <B = A + 1> creates a new variable "B", that contains the value of A + 1. Finally, the macro displays the value of variable B (the number 2) at the bottom of the screen.

Macro <sa-F> adds one to the value stored in vari-

Figure 4: Expressions That Define New Variables

```
E:<all: A = 1: B = A + 1 : msg B>!  
F:<all: A = A + 1 : msg A>!  
G:<all: B = 8 : C = 5 : A = B + 10 - C : msg A>!  
H:<all: $1 = "15" : Z = 10 + val $1 : msg Z>!
```

able A and displays the value of A in the message area on the AppleWorks screen. The first time you run this macro, A is "empty" (i.e., it contains a zero), so the formula adds one to zero and yields a one. Each time you re-run the macro, the formula increments the value of A by one. A typical use of this formula is as a "counter" to control the flow of a macro.

Macro <sa-G> demonstrates UltraMacros' ability to define and manipulate numeric variables. The macro first defines variable B to contain the value of 8 and variable C to contain the value of 5. Then the macro adds ten to the value of B and subtracts the value of C from that sum. It stores the result in variable A and displays the value of A at the bottom of the AppleWorks screen.

Macro <sa-H> uses the <val> command described above. The macro stores the string "15" in variable \$1, then adds together the number 10 and the value of \$1. That is, <sa-H> stores the value of 10 + 15 in numeric variable Z and displays the value of Z on the screen.

Rules for Numeric Operations in UltraMacros

Here are some rules to remember about UltraMacros' ability to handle numbers:

1. UltraMacros only handles positive integers between zero and 65355.
2. Since the program can only handle integers, UltraMacros discards any remainder when you divide two numbers.
3. UltraMacros performs all operations in a left-to-right order (as in the spreadsheet module). Thus, <A = 2 + 3 * 10> stores the number 50 in variable A. In addition, UltraMacros does not let you use parentheses to control the order of the arithmetic operations. However, you can

Figure 5: Tokens That Define String Variables

```
I:<all: $1 = "Beagle Bros" : $2 = right $1,4 : msg $2 >!  
J:<all: $3 = "Beagle Bros" : $4 = left $1,6 : msg $4 >!  
K:<all: Z = 99 : $1 = str$ Z : msg $1 >!  
L:<all: $3 = chr$ 65 : msg $3 >!  
M:<all: $2 = getstr 5 : msg $2 >!  
N:<all: $1 = date : msg $1 >!  
O:<all: $2 = time24 : msg $2 >!
```

Figure 6: Concatenating Strings with UltraMacros

```
P:<all: $1 = "Hello " : $1 = $1 + "There" : msg $1>!  
Q:<all: A = 5 : $1 = "Number " + str$ A +  
    " is the winner!" : msg $1>!
```

perform separate operations, store the values of those operations in different numeric variables, and then operate on those variables in a separate formula. For example, UltraMacros will *not* accept $\langle A = 2 + (3 * 10) \rangle$, but will accept $\langle B = 3 * 10 : A = 2 + B \rangle$.

Commands That Define String Variables

Figure 5 illustrates seven different commands that define string variables.

Macros <sa-I> and <sa-J>: Macros <sa-I> and <sa-J> illustrate the use of the <right> and <left> tokens. These commands let you abstract portions of a larger string and store the results in a new variable. For example, $\langle \$2 = \text{right } \$1,4 \rangle$ examines variable \$1 and stores a copy of the last four characters into \$2.

Macro <sa-I> stores the text "Beagle Bros" in variable \$1. Then the macro stores the four right-hand-most letters ("Bros") in variable \$2. Finally, the macro displays the contents of \$2 at the bottom of the AppleWorks screen.

Similarly, macro <sa-J> stores the text "Beagle Bros" in variable \$3 and creates variable \$4 with the six left-hand-most characters from variable \$3 ("Beagle"). Then the macro displays the contents of variable \$4.

Macro <sa-K>: Much as the <val> command converts strings into numeric values, the <str\$> command converts values into strings. There are many uses for this feature; for example, you can use it to combine values and text into longer text fields.

The <sa-K> macro stores the number 99 in numeric variable Z, then converts the numeric value into the string "99" and prints the string at the bottom of the AppleWorks screen. While the 99 that appears on the screen looks like a number, it really consists of two text characters; you cannot do mathematical operations on that text.

Macro <sa-L>: <sa-L> uses the <chr\$> token; the obverse of the <key> command. <key> generates the numeric ASCII value of any keystroke; <chr\$> generates the keystroke that corresponds to any numeric value. For example, $\langle \$8 = \text{chr\$ } 177 \rangle$ stores an Open-Apple-1 "character" in variable \$8.

Macro <sa-L> stores the letter "A" in variable \$3, then prints variable \$3 at the bottom of the AppleWorks screen.

You will need to use the ASCII conversion chart on page 16 of the March 1988 issue of the *AppleWorks Forum* to use the <chr\$> token.

Macro <sa-M>: Macro <sa-M> uses the <getstr> token originally described in the March 1988 Macro Primer article. <getstr> lets the user enter a specified number of characters that UltraMacros stores in a string variable. For example, $\langle \$4 = \text{getstr } 7 \rangle$ lets the user enter up to seven characters and stores those characters in variable \$4.

Macro <sa-M> lets the user enter five characters, stores that characters in variable \$2, and displays those characters at the bottom of the AppleWorks screen. You usually use the <msg> command to prompt the user to enter text that you capture with <getstr>.

Macro <sa-N>: UltraMacros supports two date functions: <date> gives the date in the format January 1, 1990, and <date2> uses the format 01/01/90. Macro <sa-N> captures the current date in variable \$1 and then displays the date at the bottom of the screen. One application of the <date> token is in macros that automatically enter the current date in new data base records.

Macro <sa-O>: If you have a clock card or an Apple IIGs, UltraMacros offers two time functions: <time> displays the time in the format 6:35 pm; <time24> displays the time in the format 18:35. Macro <sa-O> enters the time in 24-hour format into variable \$2 then displays the time at the bottom of the screen.

Note that while <date2>, <time>, and <time24> appear to generate numbers, these are really strings of text you must capture in string variables.

Manipulating String Variables

Much like it's ability to add, subtract, multiply, and divide numeric variables, UltraMacros also has the ability to manipulate string variables. I described some of these features earlier when I discussed using the <right> and <left> tokens to abstract strings of text from a longer string and the <key>, <screen>, and <getstr> commands to capture text from the keyboard or screen. UltraMacros also lets you concatenate (or append) two strings using the "+" designator. *Figure 6* depicts two examples of concatenation.

Macro <sa-P> creates the variable \$1 containing the string "Hello " (with a space after the "o"). The statement <\$1 = \$1 + "There"> appends the string "There" to the end of \$1. The message command displays the entire contents of \$1 ("Hello There") at the bottom of the AppleWorks screen.

Macro <sa-Q> creates the numeric variable A that contains a value of five. It then creates the string variable \$1 that contains the text "Number ", plus the string value of A (the character "5"), plus the text " is the winner!". The message command prints all of \$1: "Number 5 is the winner!". Note that UltraMacros truncates any string variables more than 80 characters long.

Summary

This month I described how to create numeric and string variables. The role of variables will become more evident next month, when I will discuss program flow and subroutines.

[Mark Munz is a programmer on the staff at Beagle Bros, publishers of the TimeOut enhancements for AppleWorks.]

Tokens Used in This Article

- | | |
|---------------|--|
| chr\$ | <\$5 = chr\$27>
Store a press of the Escape Key in variable \$5. |
| date | <\$1 = date>
Store today's date in the format January 1, 1990 in variable \$1. |
| date2 | <\$2 = date2>
Store today's date in the format 01/01/90 in variable \$2. |
| getstr | <\$9 = getstr 11>
Lets you enter 11 characters and stores the text in variable \$9. |
| left | <\$3 = left \$1,5>
Store the first five characters from variable \$1 in variable \$3. |
| len | <Q = len \$2>
Put a count of the number of characters stored in variable \$2 into numeric variable Q. |
| posn | <posn A,B>
Store the column position of the cursor in numeric variable A and the row position of the cursor in variable B. |
| right | <\$5 = right \$2,7>
Store the last seven characters from variable \$2 into variable \$5. |
| str\$ | <\$1 = str\$ A>
Convert the number current stored in variable A into a string of text and store that string in variable \$1. |
| time | <\$4 = time>
Store the current time in the format 8:45 pm in variable \$4. |
| time24 | <\$2 = time24>
Store the current time in the format 20:45 in variable \$2. |
| val | <V = val \$3>
If string variable \$3 starts with numeric characters, store the numeric equivalent of those characters in variable V. |

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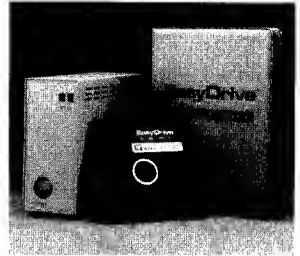
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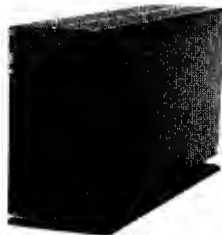
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How to Get Help with Your Hardware

by William Marriott

Each month, the *AppleWorks Forum* lists the member-volunteers who offer technical support for AppleWorks products. This month's list identifies the volunteers who can answer questions about printers and hardware, including memory cards, interface cards, the Apple /// computer, and disk drives. Next month's issue will contain a list of members who help with Beagle Bros and Pinpoint enhancements to AppleWorks.

Printers/Hardware

How to Use This List

To the left of each volunteer's name are numbers that indicate the product the consultant supports. Volunteers are listed alphabetically by state.

- 1 = 3.5-inch Disks
- 2 = Apple ///
- 3 = Apple II+
- 4 = Apple Memory Cards
- 5 = Checkmate Cards
- 6 = Floppy Disks
- 7 = Hard Disks
- 8 = Printers and Interface Cards
- 9 = RamWorks Cards
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- 11 = RamFactor Cards
- 12 = RAM Disks
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1,3,4,7-10,11	David Gillaspie	Lakewood	303/ 988-0994	303/ 431-6100
7,8,9,12	Lyle Graff	Littleton	303/ 794-5970	303/ 977-4557
1,6	Larry Thaele	Boulder	303/ 939-9072	303/ 492-2717

Connecticut		City	Home	Work
1	Martin Knight	Middletown	203/ 346-9698	
9	John R. Robinson	Niantic		203/ 739-7435

		City	Home	Work
9	Emery Roth	Washington	203/ 868-7118	
7,11	Newton Shaffer	Gales Ferry	203/ 464-9716	

Florida				
6,8,9	John Andrianoff	Fl. Pierce	305/ 468-6653	
1,8,9,10,11	H. Clay Bailey III	Jacksonville	904/ 744-2499	904/ 725-3477
1,4	Larry Brooks	Tampa	813/ 874-7355	
1,8,9	Thomas Stanius	Opa Locka	305/ 624-6162	305/ 375-2095
1,7,8,9,10,13	Jeff C. Strichard	Fl. Lauderdale	305/ 587-9590	305/ 763-3883

Georgia				
1,4,5,6,7,8,9	Jim Sulsona	Doraville	404/ 455-0853	

Iowa				
8,9	Roger Christian	Iowa City	319/ 338-7350	319/ 337-2189
9	Dan York	Marion	319/ 373-1883	319/ 373-2083

Illinois				
1,4,6,8	J. Terry Flynn	Lake Bluff	312/ 234-2820	312/ 680-0980
1,8,9,10	Dennis Ricke	St. Charles		312/ 377-4829
1,4,6,8,12	Bowen Schumacher	Winnetka	312/ 501-3314	312/ 548-0633
1,7,9,10,99	Victor Weisskopf	Lincolnwood		312/ 674-7400

Indiana				
99	Stanley Boler	Knightstown	317/ 345-5663	
4,6,8,9,10,14	Brenda Crenshaw	Shelbyville	317/ 398-0525	317/ 264-1286
1,6,8	Irvin Haas	Carmel	317/ 848-0050	
1,8	Mark Hochstetler	Indianapolis	317/ 299-3156	317/ 783-8821

Kansas				
6	Jan Laughlin	Mapleton		316/ 743-3441

Maryland				
9	Ron Jacobs	Laurel	301/ 498-0558	
1,2,6,7,8,99	David Ottalini	Silver Springs	301/ 681-5792	
1,6,9	Ronald Romanowicz	Glencoe	301/ 472-2983	301/ 472-4800
3,12,99	Michael Spurrier	Baltimore	301/ 298-0263	301/ 955-5938

Massachusetts				
7	Pamela Michaelson	Marblehead		617/ 631-0918

Michigan				
8,9,10	Dawn Andrews	Muskegon	616/ 755-4308	
1,4,6,7,9	Jim Anker	Hazel Park	313/ 391-0033	313/ 542-3910
9	Joe Connelly	Livonia		313/ 421-8729
9	Arthur Daniel	Warren	313/ 445-7105	313/ 445-7142
9	Lynn Leininger	Monroe	313/ 241-4021	
1,12	Bill Neel	Grass Lake	517/ 522-4689	
7,8	J. O'Connor	Rochester	313/ 853-1260	
9,10	Quality Computers	Grosse Pointe	313/ 331-0700	313/ 331-1115
1,6,8,11,12	Mike Robinson	Royal Oak	313/ 585-5027	
1,3,7,99	Pete Ross	Wayne	313/ 728-8720	
1,4,5,6,7,8,9	Keith Zook	Grosse Ile		313/ 875-1550

Printers/Hardware...

		City	Home	Work
Minnesota				
1,4,6,7,8	James Hirsch	Coon Rapids	612/ 421-8393	612/ 422-5572
6,9,10	Dick Kenfield	Hopkins	612/ 938-4382	

Missouri				
1,9	Whit Crowley	Manchester	314/ 394-7955	
8	Lynn Leopard	Chillicothe	816/ 646-4196	816/ 646-0702

Montana				
6,8,9,12,99	Steve Bernbaum	Sheperd	406/373-6393	
4,6,7,8	Bob Shippek	Great Falls	406/ 452-9104	406/ 791-2130

Nebraska				
1,4,6,8,9,10	Larry B. McEwen	Hastings	402/ 463-2267	402/ 463-1387

New Jersey				
99	Pete Crosta	Nutley	201/ 667-6369	201/ 266-4335
1,7,9	Edwin C. Doe	Pt. Pleasant	201/ 528-6349	
1,4,5,6,7,8	David Edwards	Camden	609/ 365-1359	609/ 966-6767
6,7,9,10	Matthew Jones	Neptune	201/ 774-0983	
9	Linde Nixon	Chatham	201/ 635-0973	
10	Stuart Schneider	Teaneck	201/ 261-1983	201/ 568-3336
12	David Jay Scott	Wall	201/ 681-0600	
1	Suzenne Thomas	Tinton Falls		201/ 842-7699

New York				
1,9,10	Bob Beer	Coram	516/ 928-6870	
3,6,7,8,10	Fred Brothers	New York		212/ 732-7072
1,6,9,10	Cynthia Gilmore	Johnstown	518/ 762-8483	518/ 725-4016
6,8	Sister Mary Gregory	Watertown	315/ 782-3460	315/ 788-4870
6,8,9	Don Menges	Rochester	716/ 544-9398	
99	Harold S. Miller	Ozone Park		718/ 641-5208
1,7,9	James Nicoll	Pittsford	716/ 381-9480	716/ 546-6732
3,6,7,8,9	David Strachen	Buffalo	716/ 832-8869	716/ 634-8238
1,3,4,6,7,8,13	Jerry Taylor	Hilton	716/ 964-3319	716/ 964-3587
4,6,8,9,11,14	Walter Taylor	W. Henrietta	716/ 359-2857	716/ 263-7700

North Carolina				
1,13	Terry W. Robertson	Charlotte	704/ 536-4261	704/ 377-0111

Ohio				
1,6,8,9	Mark Ball	Paris	216/ 862-3277	216/ 627-7806
1,3,6,7,8,12	Jessie Beale-Hansen	Cinti	513/ 751-6834	513/ 241-6400
8	William Beasley	N. Olmsted	216/ 933-4408	216/ 777-7700
9	Mark Elliot	Hudson	216/ 653-5006	216/ 686-2280

		City	Home	Work
1,6,12,99	Carman Greco	St. Clairsville	614/ 695-5026	
1,3,4,6,7,8,9	Guy R. Moore	Oxford	513/ 523-3797	513/ 746-6333
1,3,4,6,8,9	Howard Moskowitz	Toledo	419/ 535-8647	419/ 729-8412
6	Petricie Ritchey	Bowling Green	419/ 673-0040	419/ 372-7038

Oregon				
9	Calvin Behrens	West Linn	503/ 636-0762	503/ 655-0058
1,3,4,6,8,14	Jim Emig	Portland	503/ 771-1916	503/ 280-5666

Pennsylvania				
9,99	Martin Friedman	Philadelphie	215/ 473-6137	

Tennessee				
1,4	Major Michael Sutter	Clarksville	615/ 552-0973	502/ 798-8203

Texas				
3,6,8,9,12	Richard Buro	Temple	817/ 778-0386	
1,9,10	Jeff Holcomb	Carrollton	817/ 465-7978	
5,8,7	Joseph Kline	Lubbock	806/ 796-0829	
9,10,12	Ralph Logan, Jr.	Fort Worth	817/ 281-0661	
6,9	Bob Oberholtzer	Houston	713/ 664-1795	713/ 664-2011

Virginia				
4,6,8,9,99	Warren Downes	Yorktown	804/ 898-1881	804/ 898-8386
6	William W. Sanderson	Merrifield	703/ 352-1568	703/ 820-8550

Vermont				
99	Lars Baris	Essex Jct.		802/ 878-1392

Washington				
9	Thomas Chambers	Fox Island	206/ 549-4114	

Wisconsin				
6,8,9,10	Neil Johnson	Eau Claire		715/ 834-8104
1,6,8,9	Jerry K. Miller	Milwaukee	414/ 425-0778	414/ 321-3820
1,6,9,10	Mike Starck	Milwaukee		414/ 545-5233
1,9	Paul Van Wyk	Appleton	414/ 739-6503	414/ 731-0941

Canada				
6,8,9	Brian Scully	Kitchner, Ontario	519/ 744-2064	

Mexico				
5,6,8,9,99	Herve Thorn	Mexico City		905/ 516-0720

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NAUG sponsors AppleWorks seminars in various locations throughout the country. These seminars, entitled "AppleWorks: Beyond the Basics", are intended for AppleWorks users who want to solve AppleWorks problems and learn new techniques.

Seminar schedule:

May 4,6 — Boston, MA (AppleFest)
May 11 — Cleveland, OH
May 12 — Pittsburgh, PA
June 26 — Cleveland, OH
June 27 — Pittsburgh, PA
August 1 — Seattle, WA
August 8 — Portland, OR
August 10 — Denver, CO

The presenter, Dr. Warren Williams, is a technical advisor to NAUG and a frequent contributor to the *AppleWorks Forum*. He has written more than 60 articles about AppleWorks and has conducted more than 75 AppleWorks seminars throughout the country. Write or call NAUG for more information.